

REMARKS

In view of the above amendments and following remarks, reconsideration of the objections and rejections contained in the Office Action of October 30, 2007 is respectfully requested.

The Examiner's objections to claims 6 and 14 have been remedied by the above amendments. Similarly, the Examiner's rejections of claims 13 and 15 set forth in section 4 on pages 2 and 3 of the Office Action have been remedied by the above amendments.

The Examiner rejected claims 6, 7, 11, 14 and 15 as being anticipated by JP 63-80021. However, it is respectfully submitted that the Examiner's rejection is incorrect and must be withdrawn, particularly in view of the amendments as now presented above.

Please note that claims 11 and 12 have been canceled at this point in time.

Claim 6 has been amended to recite the two protrusions previously recited in the claim as a first protrusion and a second protrusion. The claim has further been amended to recite that the plate having a plurality of holes, which is installed between the first and second protrusions, has one end of the plate fixed to the first protrusion and a tip of the other end of the plate contacted with the second protrusion so as to move back and forth along the second protrusion in response to thermal stress generated therearound. This amendment is supported for example by the embodiment illustrated in Fig. 1 and for example the discussion beginning with the last paragraph of page 6 of the original specification and continuing to the top of page 8.

Independent claim 7 has been amended to include similar limitations. Further, independent claim 7 also recites the elastic plate that is fixed at one end to the second protrusion and that contact^s the other end of the impingement-cooling plate with the other end of the elastic plate. The claim further recites a pin provided on the transition piece for securing a predetermined gap between the transition piece and the impingement-cooling plate.

For support for these limitations, the Examiner's attention is again drawn to Fig. 1, which illustrates elastic plate 6 fixed to second protrusion 1d and contacts, at its other end, the other end of the impingement-cooling plate 4. Also note pin 5 in Fig. 1.

The Examiner's attention is further drawn to the accompanying full translation of JP 63-80021. In the Office Action, the Examiner rejected claims 6 and 7 as being anticipated by this reference. The Examiner referred to a plate 2 having holes installed between two protrusions, with a plate having one end thereof fixed to one of the protrusions (near 9) and the other end unfixed that kept in contact with the other of protrusions. The Examiner particularly referred to the structure illustrated in Fig. 6.

In the present invention as recited in both claims 6 and 7, one end of a plate is fixed to a first protrusion and a tip of the other end of the plate is contacted with the second protrusion so as to move back and forth along the second protrusion in response to thermal stress generated therearound. With this structure, the cooling construction according to the present invention avoids thermal stress that is generated therearound from affecting the plate, the free end of the plate reliably sealing the gap that is formed between the plate and the transition piece.

JP '021 discloses a plate 2 having one end thereof fixed to a first protrusion near 9 and a tip of another end of the plate 2 fixed to a second protrusion. The Examiner's attention is directed to the translated specification accompanying this response. The descriptions that relate to Figs. 5 and 6 disclose that the right end of the cooling cover 2 is fixed (joined) to the right protrusion (connection base 10). Specifically, with reference to Fig. 5 the translation states:

The insertion portion 9 is provided in the connection base 10 joined to the transition piece and is inserted into the cooling cover 2, the other end of the cooling cover 2 is joined to the join portion 7 in the vicinity of the exit 6 of the transition piece, and the shield plate 3 is directly joined to the transition piece at the outer circumference thereof.

With respect to the embodiment of Fig. 6 it is further stated that:

like the embodiment shown in Fig. 6, the front end of the shield plate 3' may be bended to be close to the cooling cover 2 and an air hole 11 may be provided in the shield plate 3'.

Thus, the Examiner's position that this reference meets the claim limitation of the tip of the other end of the plate contacting the second protrusion so as to be capable of movement back and forth along the second protrusion, i.e. unfixed, is incorrect. Withdrawal of this rejection is respectfully submitted to be required because JP '021 cannot meet the limitations of claims 6 and 7 in this regard.

Further, there can be no suggestion of the presently claimed invention from JP '021. The other end of the plate 2 in Fig. 6 of JP '021 is fixed to the protrusion on the right hand side. There is no reason provided in JP '021 for having it unfixed. The Examiner's conclusion that it is not fixed is incorrect.

The Examiner's assertion that the right hand end of the plate 2 of JP '021 cannot be fixed because of the presence of the shield plate 3' is also incorrect. Noting the complete translation of the reference, again, discussion of the shield plate 3 with respect to Fig. 1 discusses that it is joined to a position 8 away from the joined portion 7. In the embodiment of Fig. 4, the shield plate 3 is joined to the connection base 10. In the embodiment of Fig. 5, the shield plate 3 is directly joined to the transition piece at the outer circumference thereof. With respect to the embodiment of Fig. 6, upon which the Examiner is relying, the discussion in JP '021 makes it clear that the shield plate 3 has its front end bended to be close to the cooling cover 2. The other embodiments make clear that it is joined to a joined portion of the transition piece. In the embodiment of Fig. 6, the other end is bent toward plate 2 but not apparently joined to it.

Thus it is clear that the plate 2 is first joined at both its ends, and then the plate 3' is joined to the transition piece and has its other end bent toward the plate 2. It does not prevent fixation of the right hand end of the plate 2, contrary to the Examiner's position.

The Examiner's rationale behind the obviousness rejection of claims 6 and 7 based upon JP '021 is, accordingly, without support from the reference. The Examiner cites Andersen as an alternate treatment of the other end being unfixed. The Examiner refers to perforated cooling plate 38 supported on one end by protrusion 29, 27 and other end freely supported at 32. Reference number 38 is a perforated tip cap; the document discusses that it is preferred that the tip cap be brazed to both an integral bridge 28 and to blade sidewalls 17 and 18 to prevent sliding

out from its position. This is an entirely different structure than that being addressed by the present invention. It teaches nothing with respect to JP '021, particularly in view of the fact that JP '021 specifically teaches having the right hand end joined.

Even if the combination is made, it does not teach having the tip of the other end of the plate contacting the second protrusions so as to be able to move back and forth along the second protrusion in response to thermal stress.

In JP 62-288328, cited in combination with JP 2003-065071, the end is similarly fixed as in JP '021. The Examiner's position that it would have been obvious to make one end unfixed in order to lower heat transfer on the impingement plate or reduce the thermal stress is purely hindsight reasoning and unsupported by the teachings of the reference. Again, see the remarks accompanying the response of August 15, 2007.

The further references cited by the Examiner go no further in resolving the above deficiencies. More specific discussion at this point is not warranted. The above amendments to claims 6 and 7 clearly define these claims over all of the prior art cited by the Examiner. Indication of the allowability of these claims, along with their respective dependent claims, is requested.

In view of the above amendments and remarks, it is submitted that the present application is now in condition for allowance, and the Examiner is requested to pass the case to issue. If the Examiner should have any comments or suggestions to help speed the prosecution of this application, the Examiner is requested to contact Applicants' undersigned representative.

Respectfully submitted,

Hiroya TAKAYA et al.

By: 

Nils E. Pedersen
Registration No. 33,145
Attorney for Applicants

NEP/krp
Washington, D.C. 20006-1021
Telephone (202) 721-8200
Facsimile (202) 721-8250
February 29, 2008